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INCREASING CULTURALLY COMPETENT NEUROPSYCHOLOGICAL SERVICES FOR ETHNIC MINORITY POPULATIONS: A CALL TO ACTION

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US demographic and sociopolitical shifts have resulted in a rapidly growing need for culturally competent neuropsychological services. However, clinical neuropsychology as a field has not kept pace with the needs of ethnic minority clients. In this discussion we review: historical precedents and the limits of universalism in neuropsychology; ethical/professional guidelines pertinent to neuropsychological practice with ethnic minority clients; critical cultural considerations in neuropsychology; current disparities germane to practice; and challenges to the provision of services to racial/ethnic minority clients. We provide a call to action for neuropsychologists and related organizations to advance multiculturalism and diversity within the field by increasing multicultural awareness and knowledge, multicultural education and training, multicultural neuropsychological research, and the provision of culturally competent neuropsychological services to racial/ethnic minority clients. Lastly, we discuss strategies for increasing the provision of culturally competent neuropsychological services, and offer several resources to meet these goals.

Keywords: Ethnic minority; Cultural competence; Diversity; Neuropsychology.

INTRODUCTION

In the span of just over 100 years the US has shifted from a country in which one in eight residents was of ethnic minority status to a country in which approximately one in three residents is of ethnic minority status (US Census Bureau, 2002, 2007a). In roughly the same time frame, clinical neuropsychology has emerged as a discipline. However, despite the rapid rate of expansion of ethnic minority populations, the field of clinical neuropsychology has been slow to respond to the clinical needs of ethnic minority clients. In this discussion we provide an overview of critical cultural considerations in clinical neuropsychology and current disparities in neuropsychological practice. We also set out specific goals and a road map for

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increasing the provision of neuropsychological services for ethnic minority patient populations. Finally, we suggest resources for increasing cultural competence in neuropsychological practice.

According to the American Psychological Association's (APA) *Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists* (APA, 2003), "*all* individuals are cultural beings who possess a cultural, racial, and ethnic heritage" (p. 380). Working from these guidelines, *culture* is defined as the quintessence of a worldview born of learned and transmitted belief systems and value orientations that influence customs, norms, practices, and social institutions, including psychological processes (cognition, behavior, etc.) and organizations (educational systems, media, etc.) and that is transmitted from one generation to the next.

For the purposes of this discussion we will refer to persons of culturally, racially, and/or ethnically diverse backgrounds (e.g., African Americans, Hispanics/Latinos, Asians/Asian Americans, Native Hawaiians and other Pacific Islanders, American Indians and Alaska Natives) as *ethnic minorities*—consistent with previous authors and current US Census Bureau nomenclature (APA, 2003; US Census Bureau, 2007a). Likewise, we adopt the conceptualization of *cultural competence* set forth by Sue et al. (Sue, Arredondo, & McDavis, 1992; Sue et al., 1998) and Sue (2001) as we consider its application to neuropsychology at the individual and organizational levels:

(1) Awareness of one's own assumptions, values, biases, and stereotypes about ethnic minorities; how such beliefs and attitudes could negatively impact the provision of *neuropsychological services*; and the development of a positive stance towards multiculturalism.
(2) Knowledge and understanding regarding one's own worldview and that of one's clients; specific knowledge regarding the culture of one's clients; and understanding of sociopolitical influences.
(3) Acquisition of specific, culturally appropriate *assessment*, intervention, and communication skills necessary to effectively work with ethnic minority groups.
(4) Development of core cultural competencies, at the organizational level, based on new theories, practices, policies, and organizational structures that are more responsive to all groups.

HISTORICAL PRECEDENT AND LIMITS OF UNIVERSALISM

Vygotsky (1978) and Luria (1976) conceived of cognition as the result of a dynamic interplay of biological, socioeconomic, and cultural determinants (i.e., *radical environmentalism*; Nell, 2000). In contrast, the theory of *universalism* holds that cognitive processes are fundamentally similar across humankind, irrespective of the cultural milieu in which they arise (Nell, 2000). The field of neuropsychology, at least here in the US, has largely held a universalist presupposition of both cognition and the manner in which cognitive processes are assessed, emphasizing "a direct, unencumbered link between the neurobiological brain, cognitive processes, and behavior" (Perez-Arce, 1999, p. 582).

A potential advantage of a universalist view of cognition is that it frees neuropsychology from the need to examine construct validity and related issues. If cognitive processes are similar across cultural groups, then neuropsychological assessment instruments may be considered universally applicable. Thus, evaluation of culturally diverse clients becomes easier and less time consuming if neuropsychologists do not have to tailor each test (or construct) to the sample to be tested, and comparisons across cultures are drastically simplified if the same tests are used. In contrast, a potential disadvantage of the universalist view is that it can lead directly to nativism, because when ethnic groups differ on neuropsychological test performances, those differences can be attributed to genetic endowment rather than culture and environment (Nell, 2000). Further, Cole (1996) proposed that a universalist view of cognition underlies the concept of "culture-free" tests. He argued that cognitive tests are inevitably cultural devices that assess abilities valued by the culture wherein the test was developed, and therefore have questionable construct validity when applied outside of that culture (Cole, 1996). Several investigators have further argued that sensitivity to cultural and ethnic differences has generally been lacking within neuropsychology (Ardila, 2005; Cole, 1996; Cuellar, 1998; Nell, 2000; Perez-Arce, 1999; Uzzell, Pontón, & Ardila, 2006). Consequently, several potential disadvantages may result from a universalist view of cognition, including: (1) inaccurate and harmful racial/ethnic generalizations, (2) inadequate science (not examining construct validity), and (3) inappropriate use of tests in the assessment of racial/ethnic minority populations. In the end, neuropsychology has largely ascribed to a universalist approach of cognition with a lack of research to either support it or definitely dispute it.

INCREASING NEUROPSYCHOLOGICAL SERVICES FOR ETHNIC MINORITIES

Three major factors argue for neuropsychology as a field to increase the provision of culturally competent neuropsychological services for ethnic minorities. These factors include: (1) demographic shifts in the US population, (2) the ethics and ethos of the broader discipline of psychology, and (3) construct validity requirements in neuropsychological evaluation.

Demographics

The US Census Bureau recently announced that the US ethnic minority population reached 100.7 million (34%; US Census Bureau, 2007a). In several states, ethnic minority groups already outnumber non-Hispanic whites (US Census Bureau, 2007a). By the year 2050, approximately 50% of all US residents will belong to an ethnic minority group. Regardless of the urgency that current and future demographic shifts create by increasing demand for neuropsychological

services among ethnic minority individuals, there is an ethical imperative for the competent provision of services to these individuals.

Ethics and ethos

The ethical standards set forth in APA's *Ethical Principles of Psychologists and Code of Conduct* (EPPCC; APA, 2002) provide clear directives regarding the provision of culturally competent neuropsychological services. For instance, Standard 9.06 (Interpreting Assessment Results) of the code states that when psychologists interpret assessment results, they should "... take into account the various test factors, test-taking abilities, and other characteristics of the person being assessed, such as situational, personal, linguistic, and cultural differences, that might affect psychologists' judgments or reduce the accuracy of their interpretations." Ethical Standard 2.01 (APA, 2002; Boundaries of Competence) states that, "cultural expertise or competence at the individual level is essential for the clinician who is working with cross-cultural populations." It is clear that neuropsychologists, similar to all psychologists, have an ethical mandate to provide culturally competent neuropsychological services to ethnic minority clients. Moreover, operating under the universalist approach in neuropsychology is not only a barrier to accurate science and best practice, it is also contrary to the ethos of the broader discipline of psychology.

Construct validity

Finally, fundamental to valid neuropsychological evaluation is the use of valid instruments. APA Ethical Standard 9.02b (APA, 2002) states that "Psychologists use assessment instruments whose validity and reliability have been established for use with members of the population tested." However, as Helms (1992) has cogently argued, by and large researchers (and test publishers) have failed to investigate the cultural equivalence of neuropsychological instruments; that is, whether the constructs being measured (e.g., intelligence processing speed, learning, executive functioning, etc.) have a similar meaning within and across cultural groups. As Luria (1976) observed, tests developed and validated for use in one culture frequently resulted in experimental failures and were invalid for use with other cultural groups. Thus, neuropsychological instruments designed to measure constructs in one culture may not be readily applied to individuals of other cultures with the expectation that they will be equally measuring the same construct.

Fortunately, emerging research offers promising models for empirically investigating the construct validity of neuropsychological instruments across groups. For instance, a recent Canadian study (Tuokko et al., 2009) elegantly addressed the issue of cross-linguistic construct validity in a sample of English- and French-speaking older adults. In this study factor-analytic techniques were used to examine whether or not the latent variables underlying the *Canadian Study of Health and Aging* (CSHA) neuropsychological test battery administered in English or French were the same (i.e., invariant). The results revealed that the best-fitting baseline model, which was established in the English-speaking *Exploratory* sample

($n = 716$), demonstrated invariance among the English-speaking ($n = 715$) and the French-speaking ($n = 446$) *Validation* samples in terms of long-term retrieval and visuospatial speed and partial invariance for verbal ability (possibly due to differences in translation or other cultural effects). Thus, Tuokko et al. (2009) were able to provide some empirical support for the cross-linguistic construct validity of the CSHA neuropsychological battery utilizing a relatively straightforward multi-group confirmatory factor analysis (CFA) framework. This approach represents one promising methodology for examining the construct validity (via measurement invariance) of neuropsychological instruments across a variety of ethnic and linguistic groups (Bowden, Cook, Bardenhagen, Shores, & Carstairs, 2004; Teresi, 2006; Tuokko et al., 2009).

CURRENT DISPARITIES IN NEUROPSYCHOLOGICAL PRACTICE

Health disparities

US ethnic minority populations are disproportionately impacted by a myriad of sociocultural factors, each of which may play a role in the increased rates and possibly virulence, of particular medical disorders within these groups (Cargill & Stone, 2005). Such factors include: lower education/literacy, higher rates of poverty, and limited access to and/or use of health care services (Cargill & Stone, 2005; Fiscella, Franks, Gold, & Clancy, 2000; US Census Bureau, 2007b). Further, many ethnic minority groups (most notably African Americans, Hispanics/Latinos, and American Indians) are disproportionately suffering from medical conditions (e.g., hypertension, HIV/AIDS, hepatitis, diabetes, etc.) that may increase/heighten their need for neuropsychological services than the general population (Centers for Disease Control, 2007a, 2007b).

Diagnostic disparities

While sensitivity for neuropsychological tests appears equitable across ethnic groups, specificity is compromised for ethnic minorities (Heaton, Taylor, & Manly, 2003; Lichtenberg, Ross, & Christensen, 1994; Manly et al., 1998a, 1998b; Norman, Evans, Miller, & Heaton, 2000; Roberts & Hamsher, 1984). Numerous studies report the disproportionate rate of false-positive errors for neuropsychological disorders in African American and Latino communities (Adams, Boake, & Crain, 1982; Diehr, Heaton, Miller, & Grant, 1998; Gladsjo et al., 1999; Klusman, Moulton, Hornbostel, Picano, & Beattie, 1992; Manly et al., 1998a; Norman et al., 2000; Taylor & Heaton, 2001). This finding is most remarkable when reported from data collected on carefully evaluated, neurologically normal samples (Heaton et al., 2003). Thus, while neuropsychologists are able to provide meaningful contributions to the diagnosis and treatment planning for their non-Hispanic white clients, the lack of specificity of neuropsychological measures leaves neuropsychologists less readily able to provide parity in the standard of care for their minority clients.

Disparities in use/availability of neuropsychological services

The need for neuropsychological services for ethnic minority populations is growing, but there appears to be underutilization of services by these groups. Anecdotal evidence suggests that awareness of neuropsychological services is decreased among ethnic minorities relative to non-Hispanic whites. Decreased awareness may be related to the restrictive costs of neuropsychological evaluations, limited number of neuropsychologists at medical facilities frequented by ethnic minorities, and fewer referrals for ethnic minority patients by physicians. Even in patients who are aware of neuropsychological service options, cultural mistrust may be an additional barrier (Terrell & Terrell, 1983). A legacy of cultural mistrust of assessment of "intellectual" abilities exists for many ethnic minorities due to a history of racist misinterpretations of test differences by behavioral scientists (Gould, 1996). Access to health insurance that covers neuropsychological services is another barrier that could limit neuropsychological service utilization by ethnic minorities. Ethnic minorities are un- or underinsured in the US at a far greater rate than non-Hispanic whites (Cargill & Stone, 2005; Fiscella et al., 2000). Finally, the number of neuropsychologists who believe that they are competent to work with ethnic minorities and/or possess proficiency in non-English languages is severely limited. Multiple cultural, institutional, and financial barriers may impede neuropsychological service utilization among ethnic minorities.

The only comprehensive research of which we are aware that has examined US neuropsychologists' current practice with ethnic minorities was conducted by Echemendia, Harris, Congett, Diaz, and Puente (1997). Of the neuropsychologists surveyed ($N = 911$) who provided neuropsychological services to Latinos, approximately 82% of respondents self-rated their ability to treat Latinos as "somewhat competent" or "not at all competent." One of the most striking outcomes of this study is the finding that perceived competence to work with an ethnically diverse patient population appears to make a big difference in provision of neuropsychological services. Those respondents who rated themselves as "extremely competent" to work with Latinos also reported the largest (37%) Latino caseloads, and as level of neuropsychologists' self-rated competence to work with Latinos increased, so did the number of Latino clients served by these neuropsychologists. Overall, the authors of the survey concluded that US neuropsychologists are not adequately prepared to provide services to Latinos, nor do they have the appropriate tools to do so (Echemendia et al., 1997). No other studies have examined similar practice issues with other ethnic minority populations to our knowledge.

In sum, neuropsychologists are faced with several disparities. Current health disparities and continued growth of ethnic minority populations suggest that neuropsychologists will be increasingly called to provide services to ethnically diverse clients. Current diagnostic disparities due to a lack of appropriate training and instrumentation put ethnic minority clients at risk of not receiving appropriate diagnoses and the standard of care. Finally, current disparities in the availability and/or use of neuropsychological services put ethnic minorities at further risk of not receiving appropriate diagnosis and care. Given these disparities, some of the most pressing challenges currently facing neuropsychologists in practice are discussed below.

CURRENT CHALLENGES TO CULTURALLY COMPETENT NEUROPSYCHOLOGICAL SERVICES

Standards of training in multicultural neuropsychology at graduate and postgraduate levels

Clinicians often lack in-depth training in assessment of ethnic minorities. In 2000, van Gorp and colleagues (van Gorp, Myers, & Drake, 2000, p. 24) stated that a growth in scientific sophistication regarding cross-cultural psychology and the role of social status in behavior "have occurred independent of and with little impact on the developments in the field of clinical neuropsychology" and that "Neuropsychology curricula evidence too little course content that would increase their trainee's appreciation of the potential impact these social status factors can have on the selection and interpretation of neuropsychological assessment measures, on the context of the assessments conducted, on the samples included in neuropsychological research, and on the conclusions drawn from research with limited or inadequately characterized study samples." We have quoted so extensively from this publication because these statements are an accurate description of the current environment for most neuropsychologists-in-training. The fact that the referenced chapter was written more than 9 years ago is a striking observation about the lack of progress in multicultural training within our field.

The Houston Conference guidelines (The Houston conference on specialty education and training in clinical neuropsychology, 1998) mention that trainees should gain knowledge about "cultural and individual differences and diversity" from their core of knowledge of general psychology, and the ability to recognize "multicultural issues" from their training in assessment skills (p. 162). However, little detail was provided in the proceedings about the level of multicultural knowledge and skills required to function as a clinical neuropsychologist, or how this was to be achieved. In addition, APA-approved neuropsychology training programs must abide by Domain D of the Guidelines and principles for accreditation of programs in professional psychology (*Guidelines and principles for accreditation of programs in professional psychology*; APA, 1996), "Cultural and Individual Differences and Diversity." Essentially, Domain D requires that training programs implement a coherent plan to provide students with relevant knowledge and experience regarding how cultural and individual diversity relate to psychological research and practice. However, it is unclear that neuropsychology training programs have taken the initiative to formally integrate multicultural issues to foster cultural competence into their curricula, didactics, or training.

Broken pipeline for neuropsychologists from diverse backgrounds

Ethnic minorities are sorely under-represented as professionals within the field of neuropsychology. In 1997, ethnic minorities comprised approximately 26% of the US population, but only comprised 5.4% of neuropsychologists in the field according to APA's Division 40 (clinical neuropsychology) membership (0.9% African American, 2.5% Latino, 1.4% Asian, and 0.6% American Indian). Unfortunately, this gap in representation has widened since then. In 2006, ethnic

minorities comprised approximately 34% of the US population, but still only made up 6% of neuropsychologists in the field (1.1% African American, 3.1% Latino, 1.4% Asian, and 0.4% Native American; APA Division 40, 2006). While membership in professional organizations is not a precise marker of ethnic minority presence in the field, it is consistent with anecdotal evidence and serves as an indicator of the status of the profession.

The lack of concerted, national leadership to cultivate ethnic minority neuropsychologists at early stages of professional development is a major barrier for the diversification of neuropsychology. As compared to other psychology specialty programs, such as counseling and school psychology, ethnic minorities are disproportionately underrepresented within neuropsychology training programs (Rivera Mindt, 2007). Previous efforts have largely failed as they have been too few and too circumscribed. Few minority students are applying to graduate programs that offer specific training in neuropsychology. Even in clinical psychology graduate programs where the overall proportion of ethnic minority applicants is relatively high, fewer minorities apply to the neuropsychology track within those programs. Feedback from training directors indicates that many ethnic minority applicants to neuropsychology programs have not completed the basic undergraduate requirements for graduate study in neuropsychology and/or have Graduate Record Examination (GRE) scores that fail to meet program's set (GRE) score criterion.

We believe that one of the primary reasons that few ethnic minority students apply for, or accept positions in, many of the highly selective graduate programs that include extensive neuropsychology training is due to the lack of diversity within faculty, the student bodies, and/or the communities surrounding these universities. Research suggests that minority student representation in psychology doctoral programs is significantly associated with ethnic minority faculty representation and research opportunities with ethnic minority issues (Cole & Barber, 2003a, 2003b; Muñoz-Dunbar & Stanton, 1999). Very few graduate programs with neuropsychology specialty tracks have minority faculty who can serve as role models/mentors for ethnic minority students. Equally challenging, many programs do not have access to ethnically or linguistically diverse populations who can participate in research or provide trainees with clinical experience with ethnic minorities.

Domain D (*Guidelines and principles for accreditation of programs in professional psychology*; APA, 2008, p. 14) states APA-accredited programs will make "systematic, coherent, and long-term efforts to attract and retain students and faculty from differing ethnic, racial, and personal backgrounds into the program," that they will "ensure a supportive and encouraging learning environment appropriate for the training of diverse individuals and the provision of training opportunities for a broad spectrum of individuals," and avoid "any actions that would restrict program access on grounds that are irrelevant to success in graduate training." This principle has not been enforced in many neuropsychology training programs. Increasing ethnic minority faculty in neuropsychology training programs, and avoiding the common trend of ethnic minority faculty being more likely to occupy adjunct or instruction-only positions would be one way for neuropsychology programs to encourage diversification within the student body.

FOCUSED GOALS

The focused goals for this issue are to advocate for and demonstrate practical ways in which the field of clinical neuropsychology and individual practitioners can increase multicultural awareness and knowledge, increase multicultural education and training, increase multicultural research, and increase the provision of culturally competent neuropsychological services to ethnic minorities. We will review some of the obstacles to obtaining these goals and suggest ways to overcome the barriers.

PREVIOUS AND CONTINUING EFFORTS

Research

Empirical research. Ethnic minorities are significantly under-represented in clinical research (National Institute of Mental Health, 2001), including neuropsychology. It is unclear if many of the neurocognitive models utilized in neuropsychology are valid in ethnic minority populations. Previous research has gone far in beginning to contextualize neuropsychological test performance by offering normative data that provide comprehensive demographic corrections for certain racial/ethnic and linguistic groups (i.e., African Americans and Spanish-speaking Latinos of primarily Mexican/Mexican-American origin; Artiola i Fortuni, Heaton, & Hermosillo, 1999; Heaton, Grant, & Matthews, 1991; Heaton, Miller, Taylor, & Grant, 2004; Pontón et al., 1996; Sano et al., 1997). While this work improves diagnostic accuracy and specificity for particular ethnic minority groups, there are also limits to this work.

First, no comprehensive norms exist for adequately characterized English-speaking Latinos, Spanish-speaking Latinos of non-Mexican/Mexican-American origin, bilinguals, Asian Americans, Native Hawaiians and Pacific Islanders, American Indians, or Alaska Natives. While the Wechsler Adult Intelligence Scale – 3rd Edition and Wechsler Memory Scale – 3rd Edition provide the only demographic corrections for English-speaking Latinos of which we are aware, these norms do not provide information regarding exactly what region of the country the Latino participants were from nor how they were recruited (Lange, Chelune, Taylor, Woodward, & Heaton, 2006; Wechsler, 1997a, 1997b). This is problematic as US Latino subgroups tend to exhibit nonrandom, preferential geographical affinity (i.e., Mexicans in the southwest, Puerto Ricans in the northeast, etc.) that could interact with other demographic characteristics (e.g., education, acculturation, language, etc.) to create specific patterns of behavior and/or cognition that could potentially impact neuropsychological test performance (Llorente, 2008). Second, race/ethnicity-based norms do not address the potential performance differences associated with bilingualism, and there is a dearth of research in this area (Ardila, 2002; Bialystok, 2007; Gasquione, Croyle, Cavazos-Gonzalez, & Sandoval, 2007). Third, and most importantly, race/ethnicity-based norms do not *explain* performance differences between groups. Such research may inadvertently leave unexplained racial/ethnic differences in neuropsychological test performance open to harmful misinterpretation (Manly, 2005; Nell, 2000).

Practice research. As we discussed previously, the only comprehensive research of which we are aware that has specifically examined neuropsychological practice as it pertains to ethic minorities is Echemendia et al.'s study (1997) examining neuropsychological training and practice with Latino clients. While Echemendia and Harris (2004); Echemendia et al. (1997) have made a significant contribution to the field of neuropsychology by conducting this critical research on neuropsychological practice with Latino clients, additional research on neuropsychological practice with other ethnically diverse populations and broad research on neuropsychological service utilization among ethnically diverse populations is still needed.

Practice

Practice guidelines. Little exists in the way of formalized guidelines for neuropsychological practice with ethnically diverse clients. The American Academy of Clinical Neuropsychology (AACN) dedicated approximately one page (pp. 216–217) of their *Practice Guidelines for Neuropsychological Assessment and Consultation* (AACN, 2007) toward neuropsychological practice with "underserved populations/cultural issues." These guidelines are meant to augment APA's ethical standards, and readers are encouraged to read these guidelines directly—in their entirety.

The AACN guidelines state that "neuropsychologists who agree to evaluate members of special populations are specifically educated about issues and have experience in administering and interpreting procedures relevant to the patient in question" (2007, p. 217). The guidelines offer recommendations on alternate courses of action should neuropsychologists not have requisite education and/or experience to effectively work with "special" populations. The AACN guidelines also offer brief statements regarding the crafting of appropriate neuropsychological reports for "special" populations, the use of interpreters, the threats to validity of translated/adapted neuropsychological instruments, and related strategies to cope with instruments that have not been standardized or normed with the population with which one is working.

The AACN guidelines for working with underserved populations/cultural issues are an important first step for the field of neuropsychology, but there are several limitations to the guidelines as well. These guidelines are: (1) brief; (2) offer little in the way of providing practical suggestions for creating a pathway for neuropsychologists to gain appropriate training/experience; and (3) do not provide minimum competency levels as part of the standard of practice for working with ethnically diverse clients.

Linguistic issues. Approximately one in five US residents (47 million) speak a language other than English at home (US Census Bureau, 2003). This great linguistic diversity poses great challenges to the provision of culturally competent neuropsychological services to non-English-speaking clients, and the tremendous linguistic heterogeneity *within* certain linguistic groups further complicates the issue (Harris, Tulsky, & Schultheis, 2003). For instance, as a group, Latinos and Asian Americans vary greatly with respect to linguistic skill and language maintenance (Sattler, 2001; Wong & Fujii, 2004). Determination of language proficiency is a

complex issue in bilinguals as some bilinguals may be more proficient in their native language, as opposed to their second language, or vice versa. Balanced bilinguals (i.e., equal mastery of both languages) are typically the exception (Rivera Mindt et al., 2009).

The paucity of bilingual neuropsychologists and psychometrists has led many well-intentioned clinical neuropsychologists of varying levels of fluency to administer neuropsychological evaluations in languages other than English. Echemendia et al. (1997) reported that only 11% of neuropsychologists reported Spanish language fluency in the "adequate" to "fluent" range. When respondents were asked if they used translators with monolingual Spanish-speakers, over 50% said "yes" and 19% responded "sometimes". Eighty percent of these reported that the translators had no formal psychological or neuropsychological training. Further exacerbating this problem is the use of existing neuropsychological instruments in non-standardized applications. Examples include the reliance on nonverbal neuropsychological instruments and literal translations of English instruments for use with examinees with limited English proficiency. Although it is often mistakenly assumed otherwise, multicultural assessment practices do not advocate deviations from standard procedures with ethnic minorities, and such use of tests is not empirically supported (Cuellar, 1998).

Future efforts

The potential for effective advocacy within neuropsychology comes from variations of our current practice and knowledge skill set. Small, yet consistent, changes in the way we conduct neuropsychological training, research, and practice will produce a significant shift in the provision of services to ethnic minority communities. Primary targets for future efforts include neuropsychological education/training, research, and practice. We propose the following specific recommendations as a call to action for all neuropsychologists to increase the provision of culturally competent neuropsychological services. These recommendations are based on our review of the literature and the field, as well as APA's *Multicultural Guidelines* (2003).

Goal 1: Increase multicultural awareness and knowledge. We recommend that all neuropsychologists, regardless of training level, actively follow APA's *Multicultural Guidelines* (2003) on cultivating cultural awareness, knowledge of self and others, and recognition of the importance of multicultural sensitivity/responsiveness. The recommended actions are necessary, though not sufficient, first steps towards transforming the field of neuropsychology into one that is ready and able to effectively work with ethnically diverse populations. Specific strategies towards these ends will be discussed in the following sections (*Getting Involved & Tools/Resources*).

APA Multicultural Guideline 1: "Neuropsychologists are encouraged to recognize that, as cultural beings, they may hold attitudes and beliefs that can detrimentally influence their perceptions of individuals who are [ethnically] different from themselves" (p. 382). A "color-blind" or "intuitive" approach to the provision of neuropsychological services is unlikely to lead to equitable assessment and

treatment across ethnic groups (APA, 2003). Instead, past evidence suggests that neuropsychologists' efforts to change their attitudes and biases will go far to thwart such attitudes from negatively impacting their relationships with clients, students, and research participants (APA, 2003).

APA Multicultural Guideline 2: "Neuropsychologists are encouraged to recognize the importance of multicultural sensitivity/responsiveness to, knowledge of, *ethnically* different individuals" (p. 385). As neuropsychologists strive to become culturally competent, we must understand the sociocultural context that our clients, students, and research participants come from. Experiences with prejudice, racism, and the realities of being a member of a stigmatized group can all have a substantive impact on both utilization of neuropsychological services and actual test performance (e.g., stereotype threat; APA, 2003; Steele & Aronson, 1995). By incorporating knowledge of other cultures and minority identity development, as well as specific sociocultural information from those we work with, neuropsychologists will improve the standard of care and elevate the standard of practice for all clients (APA, 2003).

Goal 2: Increase multicultural education and training. In this section we provide three overarching recommendations aimed at increasing cultural competence of neuropsychologists and neuropsychology organizations, developing and implementing standards for multicultural neuropsychology, and mending the broken pipeline in neuropsychology. All of these recommendations are grounded in the following principle:

APA Multicultural Guideline 3: "As educators, neuropsychologists are encouraged to employ the constructs of multiculturalism and diversity in neuropsychological education [and training]" (p. 386). Despite the pioneering work of Vygotsky, Luria, and others, the field of neuropsychology has been historically reticent to move away from a purely biologically deterministic perspective towards one that also incorporates cultural, historical, and sociopolitical factors (APA, 2003). Consequently, neuropsychological education and training curricula reflect this reticence (if not outright rejection), and as a result fail to achieve the standards set forth in *APA Multicultural Guideline* 3 (Rivera Mindt, 2007). The cost of this reticence is manifest in our utter lack of preparation and competency for providing appropriate services to a full one-third of our US population. Such collateral damage is simply unacceptable. Below we provide our recommendations for moving the field forward through education and training.

- **Increase cultural competence of individual neuropsychologists and neuropsychology organizations.** As a discipline, one of the first and most effective acts of advocacy is to commit to the provision of the best possible services to ethnic minorities. This orientation to service delivery includes assessment of the cultural orientation of the client, culturally specific styles of interaction and provision of feedback, and the use of appropriate assessment measures and methodology (Dana, 1996). Cultural competence can be achieved through enhanced education and training, reliance on evidence-based practice, and increased research on the psychometric properties of neuropsychological tests in ethnic minority populations.

Doctoral, internship, postdoctoral fellowship and continuing education programs are primary targets for the development of cultural competence in neuropsychology. Each level of the neuropsychologist's training should be completed with a standard for mastery of cultural considerations in the administration and interpretation of neuropsychological measures based on the growing empirical literature. Additional mechanisms to ensure competency include: proficiency exam questions specific to culture and neuropsychology, and provision of clinical opportunities in diverse settings. For a more detailed discussion of efforts to enhance multicultural neuropsychology training, see Fastenau, Evans, Johnson, and Bond (2002).

We further advocate an empirical approach to neuropsychological cultural competence via the application of evidence-based practice (EBP): integrating the best research evidence with clinical expertise and patient values (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). Ways to implement EBP are discussed in another article in this issue (Chelune, 2008). Readers are encouraged to apply the principles of EBP to work with ethnically diverse populations.

- **Develop and implement comprehensive multicultural neuropsychology training standards.** Clinicians and researchers lack in-depth training in the culturally competent evaluation and treatment of ethnic minorities. We recommend that neuropsychology training programs actively take up this challenge in earnest, and become leaders among APA accredited programs in enforcing Domain D of the *Guidelines and principles for accreditation of programs in professional psychology* (APA, 1996).

It is important to note that efforts to increase cultural competence through multicultural and diversity training result in increasing students' self-awareness and therapeutic competence (APA, 2003), which Echemendia et al. (1997) have shown to be critical for increasing the provision of services to ethnic minorities. Moreover, culture-centered education and training has been shown to provide benefits at the individual (i.e., greater commitment towards racial/ethnic understanding), institutional (i.e., a workforce better prepared to engage with diverse colleagues and clients), and societal levels (i.e., promotion of multicultural research; American Council on Education & American Association of University Professors, 2000). However, comprehensive multicultural training standards in neuropsychology are sorely lacking.

The Houston Guidelines are among the most influential training guidelines in the field, outlining training standards and minimum competencies. Since the Houston Guidelines are to be updated in the near future, this is an ideal opportunity to expand the guiding principles for neuropsychology training programs with respect to training in multicultural neuropsychology. We recommend that the future delegates take up this topic with full comprehension of how current research, practice, and ethical multicultural concerns can be integrated into neuropsychological training at graduate and postdoctoral levels.

Close attention must also be paid to developing *cohesive* multicultural training curricula for neuropsychologists already in the profession. We recommend that professional organizations (Division 40, INS, NAN, and AACN, etc.) focus on providing continuing education in cultural competence training at conferences

and/or other venues. Instead of ad hoc culture-related presentations, symposia, or workshops, organizations are encouraged to put together specific task forces charged with working with program committee members to provide coherent and useful cultural competency training for its membership.

- **Mend the broken pipeline in neuropsychology.** Efforts to mend the broken pipeline for ethnic minority neuropsychologists will require a concerted and organized approach on the part of neuropsychology training programs utilizing several strategies. First, this effort must clearly start with outreach and mentoring of ethnic minority students at the undergraduate level. We recommend the use of creative solutions that can be implemented to recruit and retain students to existing programs, such as offering practical and research opportunities that would provide experiences with ethnically diverse individuals, even if these opportunities involve long-distance collaborations.

Our second recommendation relates to financial support of students/trainees, from the undergraduate to postdoctoral levels. Programs should set aside training and travel monies for ethnic minority students/trainees. Such funds could cover tuition, stipends, and professional development to allow for students/trainees to attend national conferences, since these students may derive particular benefit from connecting with ethnic minority students in other programs and from connecting with a nationwide network of ethnic minority neuropsychologists present at these meetings.

Our third recommendation to mend the broken pipeline in neuropsychology is a call for a task force of faculty and directors of neuropsychology training programs (from all levels of training), as well as independent advisors, to develop a model/s of training to foster cultural competence in neuropsychology. Individuals who have had success with specific aspects of training in multicultural neuropsychology, and those that may be able to provide specific examples and templates that will help programs implement these standards, would be ideal candidates for this task force. The ultimate goal for this task force would be to help neuropsychology training programs live up to the commitment of Domain D of the *Guidelines and principles for accreditation of programs in professional psychology* (APA, 2008).

Our fourth and final recommendation to mend the broken pipeline is for neuropsychology programs to actively recruit and retain ethnic minority faculty, and avoid the trend of hiring minority faculty in "adjunct" or instruction-only positions. Increased presence of ethnic minority neuropsychology faculty will provide students/trainees with role models and mentors of diverse backgrounds. This will also likely support the recruitment and retention of ethnic minority students/trainees and the overarching mission of implementing multicultural guidelines more broadly. Moreover, such hiring practices reinforce to students/trainees the program's commitment to the diversification of neuropsychology and further their development of cultural competence by having ethnically diverse supervisors—a critical aspect of developing perceived cultural competence according to Echemendia et al. (1997).

Goal 3: Increase multicultural neuropsychological research. The following recommendations are geared towards increasing empirical and practice

research to develop evidence-based practice and better target-improved service utilization by ethnic minorities. These recommendations are grounded in APA's *Multicultural Guideline 4*: "Culturally sensitive *neuro*psychological researchers are encouraged to recognize the importance of conducting culture-centered and ethical neuropsychological research among persons from ethnic, linguistic, and racial minority backgrounds" (APA, 2003, p. 388).

- **Increase empirical research on multicultural issues in neuropsychology to better inform evidence based practice.** Our first recommendation in this area is to increase ethnic minority representation in neuropsychological research, and provide adequate characterization of ethnic minorities within the study (i.e., geographic region of residence, country of origin if applicable, immigration information, acculturation, quality of education, etc.). We encourage investigators and grant-funding agencies alike to prioritize the inclusion of ethnic minority participants in neuropsychological research to better understand how existing neurocognitive models apply to ethnic minorities, and improve the external validity of this research.

Our second recommendation is to increase research dedicated to examining the psychometric integrity of neuropsychological measures in ethnic minority cohorts. In spite of the overwhelming evidence of the impact of culture on neuropsychological test performance, the discipline has lagged in the demonstration of sound psychometric properties of neuropsychological instruments. We cannot assume that neuropsychological instruments test the same (or different) constructs in different cultural groups or that these measures are equally reliable, sensitive, or specific. Rigorous empirical investigation into the reliability, as well as construct and diagnostic validity of neuropsychological instruments across different ethnic and linguistic groups is paramount to moving the field forward. Editors of major neuropsychological journals can consider invited issues in which such research is welcomed and encouraged.

Consideration of base rates of conditions and symptoms, (e.g., the relative frequency of an event within a population) can help decrease neuropsychological-related misdiagnoses by providing the clinician/researcher with a valuable diagnostic tool. The use of base rates is especially relevant in practice with ethnic minority populations given the demonstrated health disparities that impact the relative prevalence of neurocognitive conditions in these groups. Not only can base rate information assist in diagnostic accuracy, it can lessen the chance of obtaining false-positive errors. The more accurate base rate estimates are for ethnic minorities, the less likely the chance of erroneous findings.

Our third recommendation aimed at fostering evidence-based practice is the development of norms for those groups for whom high-quality comprehensive norms do not yet exist, including English-speaking Latinos, bilinguals, Asian Americans, Native Hawaiians and Pacific Islanders, and American Indians and Alaska Natives. Such norms must include information on the geographic region from which the sample is drawn and sociocultural characterization (acculturation, quality of education, country of origin, etc.), as well recruitment strategies. While improved norms are important, we clearly recognize and have discussed the limitations of ethnic-specific norms.

Our fourth and final recommendation is for an increase in research to better understand the effects of education, language, and other sociocultural factors on neuropsychological test performance. This issue is critical for informing evidence-based practice. The field must move away from handling such variables as either invisible or as posthoc issues to be controlled for—this impedes our progress as a field. Instead, even if researchers are not primarily focused upon such factors in their research, these issues may still be examined in a thoughtful and a priori manner as secondary or exploratory hypotheses.

Implementation of these recommendations will require effort at the individual and organizational levels. At the individual level, neuropsychologists can be mindful of including and appropriately characterizing ethnic minorities in their research. In addition, they can follow the suggestion of Echemendia et al. (1997), and organize at the national level in order to collaboratively and systematically collect normative data on the commonly used tests within the field. At the organizational level, our call to action includes: encouraging professional organizations and grant funding agencies to provide leadership in prioritizing research and organizational efforts to support multicultural research and development of appropriate normative data for ethnically diverse populations.

- **Increase practice research on multicultural issues and service utilization in neuropsychology.** We recommend that investigators and professional organizations (Division 40, INS, NAN, AACN, etc.) actively pursue research on neuropsychological practice with other ethnically diverse populations and broad research on neuropsychological service utilization among ethnically diverse populations. Such research is critical to getting a more accurate picture of disparities in neuropsychological service provision and will help guide efforts to increase services to underserved patient populations.

Goal 4: Increase provision of culturally competent neuropsychological services to ethnic minorities. In providing this set of practice recommendations, we are guided by APA *Multicultural Guideline* 5: "Psychologists are encouraged to apply culturally appropriate skills in clinical and other applied *neuro*psychological practice" (APA, 2003, p. 390).

- **Develop and implement professional standards for the provision of neuropsychological services to ethnically diverse clients.** We recommend that organizations that provide board certification in clinical neuropsychology, such as AACN, extend their brief guidelines on practice with underserved populations and cultural issues to develop and implement a set of minimum cultural competencies required in order to obtain board certification. Meeting such competencies would require specific types of education and training, as well as evaluation of such competencies. Thus, this effort should be coordinated with delegates of the Houston Guidelines in order to establish clear expected minimum cultural competencies in neuropsychology as a requisite for board certification, that would cover both knowledge and training based, experiential skills.
- **Increase appropriate services to linguistic minorities.** Careful examination of linguistic fluency is necessary in the context of neuropsychological evaluations in order to ensure accurate and fair results. Linguistic fluency determinations

are most preferably done through the use of validated assessment instruments, as individuals may have difficulty in accurately self-assessing language dominance/proficiency. Evaluating linguistic fluency and bilingualism by and large have not been part of standard neuropsychological training or discourse, and there has been a lack of clarity in the field regarding parameters for valid evaluation of linguistic minorities (Rivera Mindt et al., 2009).

We recommend that a task force be created to develop professional standards for the provision of neuropsychological services to linguistic minorities. Such a task force should be derived from leaders in neuropsychological research and practice with linguistic minorities, and should work closely with delegates of the Houston Guideline revisions and other professional organizations. Key points for discussion within such a task force would include valid instruments for evaluating linguistic fluency and bilingualism, appropriate measures for use with linguistic minorities, and training and competency levels for bilingual/multilingual neuropsychologists and psychometrists, as well as guidelines for the training and use of interpreters within this context. It is recommended that the training and minimum competency guidelines put forth by such a task force be made an integral part of training and board certification requirements.

Finally, it is recommended that special recruitment efforts be made by graduate programs to attract trainees who speak more than one language. Financial support for such trainees can be developed through special fellowships aimed at increasing linguistic diversity among neuropsychological trainees.

- **Increase availability utilization, and outreach for ethnic minorities.** We believe that all of the above-mentioned recommendations will go far to increase the availability and use of neuropsychological services to ethnic minorities. While such efforts are necessary, they are not likely to be sufficient, however. Increasing the availability of neuropsychological services to ethnic minorities will also require innovation and creativity, at both the administrative and practitioner levels. Based on preliminary work by Shpungin (2007), we recommend that practicing neuropsychologists take mindful stock of how their practice might impact ethnic minority clients in the following ways:

  (1) *First impressions*: Does your practice contain images of diverse people via brochures, websites, or fliers; anti-discrimination statements; diversity intentions; and/or related services? Is your facility accessible and convenient for clients (i.e., parking or close to public transport)?
  (2) *Waiting area*: Is your waiting area a welcoming place for ethnic and/or linguistic minorities (i.e., written signs, symbols, magazines, art, decorations, play materials, greetings, staff)?
  (3) *Intake interview*: Is your intake interview culturally appropriate for the various ethnic minority clients you may encounter? Do you, and if so, how do you ask about race/ethnicity, culture, quality of education, etc.?
  (4) *Clinician match*: Do you explicitly ask about a patient's preference regarding ethnic or linguistic match?
  (5) *Clinical services and treatment planning*: Do you—and if so, how do you—incorporate your client's ethnicity and sociocultural background into your

choice of neuropsychological batteries, recommendations, and treatment planning?

We also recommend that neuropsychologists become involved in and reach out to ethnic minority communities. We can increase neuropsychological awareness among ethnic minorities by: (1) offering educational talks *in the community* regarding the utility of neuropsychological services; (2) distributing descriptive pamphlets in clinics that serve ethnic minorities; and (3) offering some pro bono or reduced fee evaluations for the community. Increasing awareness also has a secondary benefit of helping clients and their family members advocate for themselves by requesting neuropsychological referrals when not offered by their physician.

WHAT TO DO "IN THE MEANTIME"

While many of the above-mentioned future goals for neuropsychological best practice with ethnic minority individuals will clearly take time to realize, clinicians and researchers remain faced with the challenge of what to do "in the meantime." For example, some might read the current critiques of the field, and come away with the (inaccurate) impression that it is better *not* to use normative corrections at all when evaluating individuals of a different race and/or ethnicity or that it is better *not* to provide services to patients of different cultures (even if there are no other accessible and better qualified practitioners in the area). However, this is far from our intent. Instead, it is recommended that some "middle-ground" approaches be utilized in order to best evaluate ethnically diverse individuals at present, including: (1) utilizing the best available neuropsychological instruments and norms possible *and* acknowledging the potential limitations of these instruments and norms in the interpretation of your findings (say in a neuropsychological report or manuscript); (2) gathering as much sociocultural information as possible (i.e., acculturation, quality of education, linguistic information, etc.) in order to best contextualize the neuropsychological findings of an ethnically diverse client or research participant; (3) referring out to a neuropsychologist who has expertise with the population in question when this is feasible or consulting with such a neuropsychologist/s when referring out is not feasible; and (4) becoming actively involved in advancing your own cultural competence, as well as that of our field (please see the following sections for resources).

HOW TO BECOME INVOLVED

Readers can become involved in advancing their own cultural competence and that of the field more broadly in a myriad ways that go beyond the recommendations discussed above. Below we provide a list of ways to get involved:

(1) *Professional organizations*: Become involved in issues and/or workgroups dedicated to multiculturalism and cultural competence within your local, state, and national professional organizations. There may be ready activities to become engaged in or the opportunity to help advance these issues within your organizations. For instance, APA Division 40 and NAN have active ethnic

minority committees involved in a number of activities, including advocacy, training, mentoring, and networking efforts. These committees also regularly sponsor workshops and presentations germane to the issues at hand.

(2) *Community*: As we mentioned above, it is imperative for neuropsychologists to become involved in ethnic minority communities in order to increase awareness and access to neuropsychological services. At the same time, neuropsychologists stand to learn much from the ethnic minority communities around them. Becoming involved in community based events, provider networks, and non-profit agencies who work with the communities of interest are all excellent ways to learn more about your ethnic minority communities and cultivate dialogues with these communities.

(3) *Work*: Find out about and participate in the multicultural and diversity training opportunities within your institution. If your institution does not offer such opportunities, request them! For those in private practice, we recommend that you provide such opportunities for your staff.

(4) *Get connected*: Find a colleague, mentor, or network where you can go when you have questions about issues of multiculturalism and diversity in neuropsychological practice. For instance, APA's Division 40 has demonstrated great leadership on this front by offering the Division 40 Ethnic Minority Affairs (EMA) Committee email list-serve.

(5) *Promote organizational change through multiculturalism and diversity*: Become an agent of change in your professional organizations, community, and work. Figure out how you can help via contributing to policies and practices, curriculum, resource availability, community relations, professional development, support, and mentoring (APA, 2003).

TOOLS AND RESOURCES

Readers are strongly encouraged to refer directly to APA's *Multicultural Guidelines* (2003) for a more comprehensive review of multicultural and cultural competency issues in psychological education, research, and practice. In addition, we recommend the following resources:

Reading resources

- *The Issues of Diversity in Clinical Neuropsychology* Series (Springer Press; Series Editor: E. Fletcher-Janzen), which includes an exceptional volume by Llorente (2008) on neuropsychological evaluation with Latinos.
- Wong and Fujji (2004) for an excellent overview on evaluation with Asian Americans, including demographic and cultural considerations, as well as practical guidelines.
- Wong, Strickland, Fletcher-Janzen, Ardial, and Reynolds (2000) and Paniagua (2005) for broader overviews and useful suggestions for working with ethnically diverse clients.

- *American Psychologist* (2002; Volume 57 [2]) for discussion on poverty, culture, and learning in psychology.
- AACN *Practice Guidelines for Neuropsychological Assessment and Consultation* (2007)
- Additional useful texts include: Nell (2000), Pontón and Ardila (1999), Fletcher-Janzen, Strickland, and Reynolds (2000), Pontón and Leon-Carron (2001), and the work of Janet Helms, D.W. Sue, and D. S. Sue.

To join the Division 40 Ethnic Minority Affairs (EMA) Email list-serve, visit: http://div40.org/Committee_Activities_Pages/Advisory_Committee/ethnic_min_affair_com.htm

Visit the US Census Bureau for additional information on current demographic characteristics of ethnic minority populations in the US: http://www.census.gov/pubinfo/www/hotlinks.html

Additional links to societies and professional organizations include:

- Hispanic Neuropsychological Society: http://www.hnps.org-a.googlepages.com/
- APA Division 45 (Society for the Psychological Study of Ethnic Minority Issues): http://www.apa.org/divisions/div45/
- APA's Office of Ethnic Minority Affairs: http://www.apa.org/pi/oema/
- Association of Black Psychologists: http://www.abpsi.org/
- National Latino/a Psychological Association: http://www.nlpa.ws/
- Society of Indian Psychologists: http://www.geocities.com/indianpsych/
- Asian American Psychological Association: http://www.aapaonline.org
- International Association for Cross Cultural Psychology: http://www.iaccp.org/
- Society for the Psychological Study of Social Issues: http://www.spssi.org

Additional links to educational and research resources include:

- Center for Cross-Cultural Research: http://www.ac.wwu.edu/~culture/
- Cross-Cultural Library: http://latino.sscnet.ucla.edu/Cross-Cultural-Library.html
- Indian Health Service and Links to American Indian/Alaska Native Affairs: http://www.ihs.gov/misc/links_gateway/Links_Main.cfm
- Asian Studies WWW Virtual Library: http://coombs.anu.edu.au/WWWVL-AsianStudies.html

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